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ABSTRACT

Previously reported data (Brown, 1973) on language acquisition were analyzed to provide information about the correspondence of form, function, and meaning. The spontaneous speech records of two children were investigated. The observation period began when the boy was 25 months old and the girl was 18 months old and lasted 11 months. The linguistic forms they used to refer to themselves as possessors and form-meaning and form-function correspondence were examined. The nominal form was retained during the period that the prenominal form appeared. Both children used both forms over a long period of time. Both children constructed a form-function relationship that does not exist in the target language they were acquiring and continued to use this construct for a long period of time in a systematic way. As the children developed the adult form of language, they constructed their own hypotheses about the connection between linguistic forms, meanings, and functions. Analytical results support the view that language acquisition is a step-wise approximation to the target language using a hypothesis construction. (RW)

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Form and Function in the Development of Possessives*

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1. Introduction: The descending and the ascending approach

This investigation has a long past history, as it is based on data collected almost exactly 20 years ago by Roger Brown and his colleagues (see Brown, 1973). Brown's research project was concerned with the acquisition of language in three children, whose speech production and linguistic interactions were recorded at regular intervals in a home setting. The three leading actors of the project, Adam, Eve, and Sarah, are now adults and could in principle be asked about their memories of the research project and the course of their own language development in general. But, just as with any adult, such memories are not likely to be especially productive, and as retrospective data sources for language acquisition would probably prove to be completely worthless. The adult's notoriously poor memory for his own language acquisition is not only an interesting research phenomenon, but also a fundamental methodological problem, the consequences of which are tied up with every theoretical and empirical investigation of language acquisition. The image held by the adult of his native language is imprinted by a relatively stable goal state of that language. Thus it happens that adults tend to measure children's production and comprehension of language by the rules and conventions which apply to the adult form - the goal state - of the language. This "adult-centered" bias is encountered not only in adults who experience the language development of their own or other children as interested observers, but also among those who are engaged professionally in the investigation of language acquisition. This methodological approach, which takes the adult concepts of either speaker/hearer or the fixed grammar of the target language as reference points for developmental changes, has been described elsewhere as the descending approach (Deutsch, 1983). According to this approach, certain deficits that show up in the child's repertoire but not in the adult's disappear with time.

The essential investigative goals are thus concentrated on the temporal and substantive form of the deficits at various junctures in development, and on the description of the mode of progress and the interdependence of changes. The descending approach is characterized by many methodological advantages, but it simultaneously pays dearly for them with a number of shortcomings. Child language is so-to-speak placed in a "Procrustean bed", in which all characteristic features

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that cannot be unequivocally classified as "right" or "wrong" as defined by the target language are laid to rest. This leads to a static view of language acquisition which chiefly states what the child is and is not capable of at a given point in time.

The more dynamic aspects of language acquisition are the domain of a view that we have characterized elsewhere as the ascending approach (Deutsch, 1983). While the descending approach proceeds on the assumption of deficits in child versus adult language, the ascending approach emphasizes the uniqueness of child language as a system, which, in the words of Stern and Stern (1907), in spite of large individual differences between children and different developmental phases, has its own typical rules. The main objective in investigating the ascending system is to reconstruct the unique rules of child language at different points in the course of development, and to describe the changes in the relations between linguistic forms, functions and their meanings. What would be ideal in this regard is a comprehensive corpus of acquisition data, collected longitudinally and containing spontaneously produced material, which would provide information about the correspondence of form, function and meaning as seen through the eyes of the child -- the data, for instance, collected 20 years ago in Roger Brown's project.

2. Possessives in development

We now explore in more detail some research that can be viewed as an example of the ascending approach discussed above. With regard to a specific thematic area of language - the development of possessives - we want to reconstruct, using data from Brown's project, how the relations between forms, functions and meanings of possessives in two of the children (Adam and Eve) appeared in certain phases of language development, and how these relations changed during the course of development. In addition, we want to investigate to what degree the developing relations were constructed by the children themselves, or whether such relations should be viewed as a reflection of the linguistic input Adam and Eve heard in their immediate surroundings.

Nevertheless, this research is not completely free of what we pointed out earlier as characteristic of the descending approach. In our analysis we, of course, include all the forms that count as possessives according to the criteria of the target language; that is, all constructions that express the relation between possessor and possession in particular linguistic forms. Included are
(1) all attributive constructions in which the possessor and the possession are part of a nominal phrase, as in "Adam's book" and "My pencil";
(2) all predicative constructions where the possessor and the possession appear in different sentence parts (either noun or verb phrase) and
(3) all instances in which the possessor was explicitly marked by a pronominal or inflected nominal form like "mine" or "Adam's" without specifying the possession in the same utterance. Such possessive

expressions in English, as well as in many other languages, are not exclusively relational concepts, which deal with actual ownership or property in the sense of social norms and concepts of value, but rather relate also to spatial relations, which have nothing to do with the concept of possession in a narrow sense. For this reason it must remain an open question whether Adam and Eve actually wanted to express possessor-possession relations with the linguistic forms of possessives we analyzed, and whether they may not have used still other linguistic constructions for possessives than those considered in our analysis.

We come now to some results of our analysis. Here we are concerned chiefly with the question of how Adam and Eve, in four separate segments of the study, refer to themselves as possessors. Which forms do they use, and in connection with which meanings and functions? Is there really something like personal rules that are different from those in the target language?
Our analysis covers an observational period starting when Adam was 25 months and Eve 18 months, and ending when Adam was 36 months and Eve 29 months. We have divided the period into four phases of equal length (in time) for each child so that a direct comparison between the children is possible.

2.1 Self as possessor

First, let us look at which linguistic forms Adam and Eve use to refer to themselves as possessors in the four phases. Of special interest here is the comparison between nominal forms of the referent, with the inflected and uninflected form of the child's name (Adam('s), Eve('s)), and the pronominal forms (my, mine), the latter which corresponds to the conventional forms in adult language. The pronominal forms differ from the nominal forms because they require the speaker to take into account the currently existing distribution of communicative roles (see Böhme, 1983; Clark, 1978; Deutsch and Pechmann, 1978; among many others).

Table 1
Relative Percentage Self as Possessor with Name and with Pronoun

	ADAM Phase				EVE Phase			
Linguistic form	I	II	III	IV	I	II	III	IV
Name	43	60	50	6	67	33	55	2
Pronoun	57	40	50	94	33	67	45	98

The comparison of relative frequencies of the use of both forms presented in Table 1 shows that the nominal form neither completely disappears as soon as the pronominal form appears, as one might expect, nor that the nominal form fades out in favor of the pronominal form

with time. Rather, what appears to be the case is that Adam and Eve use both forms "side by side" over a long period of time (Phases I - III). Not until Phase IV does the nominal form disappear in both children in favor of the pronominal form.

2.2 Form-meaning and form-function correspondences

This pattern in the data raises the question of whether Adam and Eve's use of one form or another depends on chance, or whether the children construct a form-meaning or form-function correspondence that does not occur in the target language. With this in mind, we next checked whether a relation between possession and the linguistic form used for the possessor could be found in the children's utterances. Will an object that is (relatively) continuously bound to the possessor (e.g. a body part) tend to be linked with the nominal form of the possessor, while an object that is conceptually "looser" from its owner (e.g. a toy) tend to appear in conjunction with the pronominal form? Our analysis shows that in the possessive constructions of Adam and Eve, concrete objects such as "ball" and "pocketbook" are most often named as possessions. Inherent possessions such as body parts or family relations are referred to only seldomly. We see, then, that Adam and Eve use possessives especially if the existence of a possessive relation between the involved persons is not completely obvious.

Our analysis shows further that the nominal designation of the possessor tends to occur only in conjunction with inherent possessions, but in the case of non-inherent possessions connections occur in both directions. Thus the use of pronominal and nominal forms is not clearly determined by the type of possession.

How do the correspondences beteen form and function behave? Is it possible that Adam and Eve express different functions with the concurrently appearing forms in Phases I - III? To answer this question, we tried to analyze all the possessives that occurred according to functional criteria. In carrying out the functional analysis of the utterances containing the pronominal and nominal forms we have made use of several criteria:
(1) The nonlinguistic context concerning the ongoing activity and knowledge of actual ownership.
(2) The linguistic context, namely the utterances which preceded and followed the utterance under consideration. There were instances that could not be included in the analysis of the form-function pairings, because neither the linguistic nor the non-linguistic context were sufficient for coding purposes.

Our functional analysis is based on a simple dichotomy that follows a suggestion of Stern and Stern (1907) and Greenfield and Smith (1976), among many others. We distinguish between two functions that are not mutually exclusive, since they could occur in combination. We call the first function indicative: The speaker uses a possessive construction to indicate that the possessor is a sort of attribute of the object referred to or to assist in picking out a specific object when several

exist (see Karmiloff-Smith, 1979). The second function is called volitional: The speaker uses a possessive construction to request an object that she/he does not possess but would like to or to claim or maintain possession of an object she/he believes is his/her own.

Table 2 shows the main changes of these form-function correspondences from Phases I - III to Phase IV.

Table 2

Main changes of form-function correspondences in ADAM and EVE

Functional Category	Linguistic Marking in Phase			
	I	II	III	IV
Indicative Function	Nominal	Nominal	Nominal	Pronominal
Volitional Function	Pronominal	Pronominal	Pronominal	Pronominal

These changes appeared in both children, irrespective of their different ages. During Phases I - III both children express the indicative function of possessive constructions by using their own name. In contrast, Adam and Eve employ the pronominal form when the volitional function of requesting or maintaining an (alienable) possession was involved. Examples can be found in the following Table 3.

Table 3

Examples of form-function pairing during Phases I - III*

INDICATIVE FUNCTION

1.M: What kind of truck?
A: Adam truck

2.M: What is that?
A: Adam glove

3.(looking at picture book)
A: Just like Adam horsie shirt

4.E: Dat Eve nose, dat Mommy nose.

5.E: Tapioca on Eve hand.

6.E: Please wipe Eve nose.

7.E: Eve fix Eve puzzle.

VOLITIONAL FUNCTION

8.M: Did you show Ursula that?
A: My

9.M: Bring it here please.
E: My
M: I know it's yours would you bring it here

10.A: Let me want knife. Dat no Mommy knife. Dat a my knife. My knife.

11.A: My, Cromer (taking C's pen)

12.E: That mine. That mine. That mine. (pointing to baby sister's bottle).

*A = Adam, E = Eve, M = Mother, R = Researcher

In sum, both children appear to construct a form-function relationship that does not exist in the target language they are acquiring, and they continue to use their own rational construction for a fairly long period of time in a systematic and predictable way. This finding suggests the question whether the form-function correspondence we observed is something Adam and Eve constructed themselves, or whether it has been picked up from the utterances directed at them by adults. We therefore examined the forms used by adults in their interactions with Adam and Eve. The forms alone show wide variation from those we found with Adam and Eve: the adults only seldomly used the nominal form in Phases I - III to designate the speaker or addressee as possessor. We found no evidence whatsoever for the existence of a form-function correspondence comparable to that used by Adam and Eve.

3. Conclusions

It is striking how compatible our findings are with the general considerations of language acquisition formulated in 1907 by Stern and Stern. They view language acquisition as a convergent process with two fundamental characteristics. The direction of the process consists of a step-wise approximation to the target language. When we look at how Adam and Eve use the pronominal possessive constructions in Phase IV, we can no longer identify any qualitative variation from the adult form of the language, since the nominal forms for reference to self as possessor have nearly disappeared and the pronominal forms are used for multiple functions. The path to this goal is primarily a constructive process, in that children construct their own hypotheses about the connection between linguistic forms, meanings and functions. The result can be "personal rules" which, like the form-function correspondence we described, can be in agreement with possessive constructions, having only the disadvantage of not corresponding with the target language. The consistence of these personal rules may also explain why Adam and Eve maintained their own rules independently over a long period of time.
The question remains, however, what finally prompted them to give up their personal rules? A possible reason could be that conflicts arise in the coordination of production and comprehension processes when children persist in applying personal rules in their own production that have no existing structure to hang onto in the utterances they hear in their linguistic environment. Perhaps children solve such conflicts by abandoning idiosyncracies in their own production in favor of more general, obligatory rules and conventions.

We end this report of our research with a quote that makes no intentional comment on language acquisition, but which can still perhaps illustrate what we mean by the ascending approach and what we want to demonstrate with the examples from the "development of possessives". Hans Sachs, in Richard Wagner's "The Mastersingers of Nuremberg", leaves us with this thought (since a good English translation, which would preserve the form-meaning correspondence, seems impossible, we'll quote the German original as well as a tentative English translation).

"Wollt ihr nach Regeln messen, Was nicht nach eurer Regeln Lauf, der eigenen Spur vergessen Sucht davon erst die Regeln auf."	If you wish to apply rules to something that is not constucted according to your rules, forget your own path of thinking, Investigate these new rules.

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